NOTE

This Microfiche meets the quality requirements of the American National Standard for Microfiche of Documents (ANSI PH5.9-1975). However, because of imperfections in the document from which it was made, it contains images that are illegible or difficult to read. The source document for this microfiche is the best copy that could be obtained prior to filming.

CIS

Calendar No. 750

101ST CONGRESS
2d Session

SENATE

REPORT
101-404

AUTHORIZING THE USE OF RIGHTS-OF-WAY ALONG FEDERAL-AID HIGHWAYS

JULY 31 (legislative day, JULY 10), 1990.—Ordered to be printed

Mr. BURDICK, from the Committee on Environment and Public Works, submitted the following

REPORT

[To accompany S. 221]

The Committee on Environment and Public Works, to which was referred the bill (S. 221) to amend title 23, United States Code, to authorize the use of rights-of-way along Federal-aid highways for the construction of transportation systems that will be part of the Federal-aid highway system, having considered the same, reports favorably thereon with an amendment and recommends that the bill as amended do pass.

GENERAL STATEMENT

The turn of the twentieth century ushered in the age of the automobile and, shortly thereafter, the age of flight. In retrospect, we might consider this coincidence a revolution in transportation. Yet it did not occur without a struggle. Americans were reluctant to abandon the train in favor of the automobile, just as they had been reluctant to see the train replace the stagecoach. The disinclination to abandon the safety of terra firma and take to the skies was even more powerful. In time, though, America accepted—even demanded—both the freedom of the automobile and the speed of the airplane. Today, the Nation's relationship with these two machines has evolved to where both are intrinsic to the Nation's identity.

America's fondness and need for the automobile gave rise to the largest public works project in the history of mankind. Today, the National System of Interstate and Defense Highways, which will total 43,000 miles of superhighway, is nearly complete. But we are discovering that even as we finish this mammoth 30-year task vital

S323-13

segments are already overwhelmed. Particularly around major cities, our highways are jammed with stop-and-go traffic on a daily basis, clearly unable to meet existing demands. In 1987, an astonishing 65 percent of peak-hour travel on urban interstates experienced congestion. And with total highway travel delays exceeding 2 billion hours annually, this situation can only grow worse.

A similar situation is occurring in the air transport industry. Passenger loads are at an all-time high, and our airports physically cannot accommodate this demand. Flight delays cost American businesses an estimated $5 billion annually—a situation that is not likely to improve in the near future. At least 21 of the Nation's largest airports experience more than 20,000 hours of flight delays annually, a condition that will likely afflict 13 more airports by 1997. But in spite of these figures, there has not been a new major airport built in the United States since 1974.

We have stretched our most basic transportation resources beyond capacity, making the time ripe—as it was at the turn of the century—for a new transportation age.

The mode (or modes) of transportation that will carry us into this new transportation age is, of course, uncertain. At a minimum, it must be capable of moving large numbers of passengers at high speed. As we reckon with the environmental realities of hydrocarbon-fueled motor vehicles and airplanes, an environmentally benign system also seems essential.

Based on these criteria, the Committee believes that at least one component of the solution to our Nation's transportation problems must be the development of magnetically levitated surface transportation systems.

Maglev, as the technology has come to be known, would travel at very high speeds (in excess of 300 miles per hour) along guideways. Maglev is already a commercially viable mode of transportation. Full-size prototype vehicles are being perfected in Germany and Japan, aided by the infusion of significant amounts of government capital. In this country, maglev systems are either under construction or in the planning stages in Orlando, Florida, and between Las Vegas, Nevada, and Los Angeles, California. Such systems must—and are—being considered for other high-traffic-density corridors.

Superconducting maglev technology was first conceived in 1960 and patented in 1968 by Drs. James R. Powell and Gordon T. Danby of the Brookhaven National Laboratory. The technology conceived by Powell and Danby would use superconducting magnets to levitate the maglev vehicle roughly 6 inches above the guideway and propel it at speeds approaching 300 miles per hour. At least initially, the Federal Government showed interest in the maglev concept. Maglev research was carried out by a number of Federal institutions and private organizations through the mid-1970's. By 1975, however, maglev was no longer a Federal priority. Like so many other technological breakthroughs first achieved in the United States, the commercial application of maglev shifted overseas.

By the late 1970's, the Japanese National Railroad had constructed a superconducting maglev vehicle that reached speeds of 320 miles per hour on a 7-kilometer test track. In West Germany, attention has focused on electromagnetic maglev development; the

resultant full-size Transrapid system has reached speeds of 256 miles per hour on the 31.5 kilometer test track at Emsland.

In this country, however, the benefits of a renewed commitment to maglev are only now being perceived. The inclusion of $9.6 million for maglev in the President's Fiscal Year 1991 budget represents the first U.S. step towards reasserting global leadership in yet another technology developed at home—but built abroad.

The ability to move large numbers of passengers quickly, quietly, and cleanly is essential. As the Maglev Technology Advisory Committee, established in October, 1988, points out in its Executive Report to the United States Senate Committee on Environment and Public Works, "(T)he question is not 'Can we afford to implement Maglev?' but rather, 'Can we afford not to?' " The Advisory Committee also emphasizes in its Executive Report the logic and benefit of using existing federal-aid highway rights of way for the construction of maglev guideways, the very purpose of this legislation.

At present, a Federal Maglev Executive Committee, made up of representatives of the Department of Transportation (DOT), the Army Corps of Engineers, the Department of Energy, and the Environmental Protection Agency is coordinating Federal maglev efforts. The Army Corps of Engineers received $1 million for a pilot program in the Fiscal Year 1990 Energy and Water Development Appropriations Act.

In advance of consideration of this bill, the Committee requested that the Federal Highway Administration of the United States Department of Transportation render a legal opinion regarding the effect of this bill on the authority of the Secretary of Transportation or the Federal Highway Administrator to allow other transportation systems to utilize Federal highway rights-of-way. That opinion follows:

U.S. DEPARTMENT OF TRANSPORTATION,
FEDERAL HIGHWAY ADMINISTRATION,
Washington, DC, May 30, 1990.

Hon. QUENTIN N. BURDICK,
Chairman, Committee on Environment and Public Works,
U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Committee has requested our legal opinion on the impact of the substitute to S. 221, the Magnetic Levitation Authorization Act of 1990, which was approved by the Committee on April 24, 1990. At that time you expressed your concern that this substitute may diminish or eliminate certain existing authority of the Secretary of Transportation or the Federal Highway Administrator to promote or regulate in the future other forms of transportation along the rights-of-way of Federal-aid highways, such as existing high-speed rail technology. The Committee has requested our legal opinion on this matter.

The S. 221 substitute does not contain any language that would limit or alter our current authority to allow other transportation systems to use highway rights-of-way. Also, we find nothing in the S. 221 substitute that would conflict with existing authority.

Under current law we have the following authority: 23 U.S.C. 142(g)—authorizes in any case where sufficient land exists within

the publicly acquired rights-of-way of any Federal-aid highway, needed rail or nonhighway public mass transit facilities where this can be accomplished without impairing automotive safety or future highway improvements; lands and rights-of-way may be made available without charge to a publicly owned mass transit authority if the Secretary deems that the public interest will be served.

The S. 221 substitute does not amend or repeal this existing authority. Please contact me if I can be of any further assistance with regard to this legislation.

Sincerely yours,

T.D. LARSON, *Administrator.*

HISTORY OF LEGISLATION

Senators Daniel Patrick Moynihan and Harry Reid introduced S. 221 on January 25, 1989. The bill was referred to the Committee on Environment and Public Works. On March 9, 1990, the Committee held oversight hearings on maglev (S. Hrg. 101-599). Previously, the Committee has held hearings on maglev technology on September 28, 1988 (S. Hrg. 100-566, Part 2); February 26, 1988 (S. Hrg. 100-566); and January 21, 1988 (S. Hrg. 100-244, Part 3).

PURPOSES OF THE BILL

The bill directs the Administrator of the Federal Highway Administration to issue regulations to allow for the design, construction, operation, and maintenance of high-speed magnetic levitation transportation systems (maglev) along Federal-aid highway rights of way.

The bill also authorizes such sums as may be necessary for the Army Corps of Engineers to design, construct, and test full-scale prototype maglev systems. Such prototypes must be appropriate for conversion to commercially viable transportation systems, and must utilize existing federal-aid highway rights-of-way.

The bill also authorizes the Secretary of the Army for Civil Works to perform maglev research and development in conjunction with the Department of Transportation, the Department of Energy, the Environmental Protection Agency, and other Federal agencies deemed appropriate by the Secretary of the Army for Civil Works.

SECTION-BY-SECTION ANALYSIS

Section 1 of the bill directs the Federal Highway Administration (FHWA) to issue regulations permitting the use of federal-aid highway rights-of-way for maglev projects.

Subsection (a) of section 1 creates a new section 159 of title 23, United States Code, enabling the Administrator of FHWA to approve requests by States to use federal-aid highway rights-of-way for maglev systems. However, the bill stipulates that such use must not impair the safe and efficient use of the highway itself. The bill also stipulates that section 156 of title 23, United States Code, shall not apply to projects proposed under this section.

Subsection (b) of section 1 directs the Administrator of FHWA to promulgate regulations to implement section 1 within 24 months after the date of enactment of the Act.

Subsection (c) of section 1 directs the Administrator of FHWA to report to the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives on the interim status of the promulgation required under subsection (b) of section 1 as well as any requests by States to use federal-aid highway rights-of-way for maglev systems.

Section 2 of the bill provides authority for the Army Corps of Engineers role in the development of maglev systems.

Subsection (a)(1) of section 2 authorizes the Secretary of the Army for Civil Works to perform research and development activities regarding maglev technology.

Subsection (a)(2) of section 2 authorizes the Secretary of the Army for Civil Works to design, develop, construct, and test full-scale maglev systems suitable for conversion to commercial utilization, or provide for such.

Subsection (b) of section 2 authorizes the Secretary of the Army for Civil Works to conduct advanced maglev research and development in partnership with the Department of Transportation and in coordination with the Department of Energy, the Environmental Protection Agency, and other interested Federal agencies.

Subsection (c) of section 2 authorizes the Secretary of the Army for Civil Works to collaborate with non-Federal entities in its research and development efforts.

Subsection (d) of section 2 enables the Secretary of the Army for Civil Works to enter into contracts or cooperative research and development agreements as defined by section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a). The subsection enables the Secretary of the Army for Civil Works to fund up to 75 percent of the costs of each project.

Subsection (e) of section 2 requires that the research, development, and use of any technology developed under this section, including licensing terms and the distribution of future royalties, be subject to the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701–3714). The subsection also authorizes the Secretary of the Army for Civil Works to require the non-Federal entity to certify that research and development be performed substantially in the United States, and that products that result from such research and development be produced substantially in the United States.

Subsection (f) of section 2 requires the Secretary of the Army for Civil Works to report within one year of the date of enactment of this Act and each year thereafter to the Committee on Environment and Public Works in the Senate and the Committee on Public Works and Transportation in the House of Representatives regarding the Army Corps of Engineers' efforts, both singular and collaborative, in the research, development, and construction of maglev systems.

Subsection (g) of section 2 authorizes such sums as may be necessary to carry out this section.

ROLLCALL VOTES

Section 7(b) of rule XXVI of the Standing Rules of the Senate and the rules of the Committee on Environment and Public Works require that any rollcall votes are to be announced in reports accompanying legislation. During the committee's consideration of this measure, no rollcall votes were taken. The bill was ordered reported by voice vote.

COST OF LEGISLATION

Section 403 of the Congressional Budget and Impoundment Control Act requires each report to contain a statement of the cost of the reported bill prepared by the Congressional Budget Office. That statement follows:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, May 1, 1990.

Hon. QUENTIN N. BURDICK,
Chairman, Committee on Environment and Public Works,
U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the attached cost estimate for S. 221, a bill to amend title 23, United States Code, to authorize the use of rights-of-way along federal-aid highways for the construction of transportation systems that will be part of the federal-aid highway system.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

ROBERT D. REISCHAUER,
Director.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

1. Bill number: S. 221.
2. Bill title: A bill to amend title 23, United States Code, to authorize the use of rights-of-way along federal-aid highways for the construction of transportation systems that will be part of the federal-aid highway system.
3. Bill status: As ordered reported by the Senate Committee on Environment and Public Works, April 24, 1990.
4. Bill purpose: S. 221 would authorize the use of rights-of-way of federal-aid highway projects for magnetic levitation facilities. Regulations issued by the Federal Highway Administration (FHWA) would govern the use of rights-of-way for this purpose. In addition, the bill would direct the Army Corps of Engineers to conduct research and development on magnetic levitation technology, and to design, construct, test, and evaluate various prototypes, including a full-scale prototype system. To fund these projects, the bill would authorize appropriations of an indefinite amount.
5. Estimated cost to the Federal Government:

[By fiscal year, in millions of dollars]

	1991	1992	1993	1994	1995
Estimated authorizations	7	13	25	25	25
Estimated outlays	4	9	19	23	25

The costs of this bill fall within budget function 400.

Basis of estimate: These estimates are based on a program of federal funding for design and research and development activities leading up to the construction of a prototype magnetic levitation system of about 20 miles in length. Based on information provided by the Corps of Engineers, CBO estimates that the total cost of such a project would be about $1 billion over eight years, assuming appropriation of the necessary amounts. Further, CBO assumed that the federal government would pay 50 percent of the cost of this program, with the remainder to be paid by private industry or state or local governments. The federal costs would be greater or less depending on the actual matching rate. The outlay estimate is based on historical spending rates for similar programs.

The construction of such a system would probably begin in fiscal year 1996, at which time total costs would increase to $200 million to $300 million per year for two to three years. Federal costs in those years would increase commensurately.

6. Estimated cost to State and local governments: None.
7. Estimate comparison: None.
8. Previous CBO estimate: None.
9. Estimate prepared by: Marjorie Miller.
10. Estimate approved by: C.G. Nuckols (for James L. Blum, Assistant Director for Budget Analysis.)

Regulatory Impact

Section 11(b) of rule XXVI of the Standing Rules of the Senate requires the Committee to evaluate the regulatory impact of the reported bill. The Committee anticipates no significant regulatory impact resulting from enactment of this legislation.

Changes in Existing Law

The table of contents for chapter 1 of title 23, United States Code, is amended by adding at the end thereof the following new item:

159. Rights-of-way for magnetic levitation systems.

○